

Amended Pages 8, 9, 9a, 10:

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Claims

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1. A method for safely coupling an external voltage network to an operating voltage network, in particular of a motor vehicle, in which at least one controllable switch (Q_2) is arranged between the operating voltage network (BN) and a connecting terminal (VK), the at least one controllable switch is connected to a control unit (SG), the connecting terminal (VK) is designed for connection of the external voltage network (FN) and the method comprises the following steps:

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– measuring the voltage at the connecting terminal (VK),

– examining whether the measurement voltage is not below a lower threshold value and not in excess of an upper threshold value,

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– closing the controllable switch (Q_2) if the measurement voltage is within the permissible range,

– measuring the current flowing between the connecting terminal (VK) and the operating voltage network (BN),

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– examining whether the current is not below a lower threshold value,

– opening the at least one controllable switch (Q_2) if the current is outside the permissible range.

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2. A method according to claim 1, characterized in that the method steps are carried out with activated ignition lock (Q_1) only.

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3. A method according to claim 1,

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characterized in that the controllable switch (Q_2) is opened when the current between the connecting terminal (VK) and the operating voltage network (BN) is in excess of an upper threshold value.

- 125 4. A method according to claim 1,
characterized in that, after opening of the controllable switch (Q_2), this state is maintained until the voltage at the connecting terminal (VK) drops to zero or falls below a lower threshold value.
- 130 5. A method according to claim 1,
characterized in that the measurement of the voltage at the connecting terminal (VK) is carried out permanently during the entire process.
- 135 6. A method according to claim 1,
characterized in that the results of the measurement result examination steps are output via a display unit (AE).
- 140 7. A method according to claim 1,
characterized in that, after opening of the at least one controllable switch (Q_2), said switch (Q_2) is closed again at regular intervals in order to determine whether the operational state that caused opening of said switch (Q_2) is still present.
- 145 8. A circuit arrangement for carrying out the method according to any of claims 1 to 7, comprising:
- a measuring means for measuring the voltage at the connecting terminal (VK),
 - 150 - an examining means for examining whether the measurement voltage is not below a lower threshold value and not in excess of an upper threshold value,

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- 155 – a means for closing the controllable switch (Q_2) if the measurement voltage is within the permissible range,
- a means (ME_1) for measuring the current flowing between the connecting terminal (VK) and the operating voltage network (BN),
- 160 – a means for examining whether the current is not below a lower threshold value,
- a means for opening the at least one controllable switch (Q_2) if the current is outside the permissible range.
- 165 9. A circuit arrangement according to claim 8, characterized in that the controllable switch (Q_2) is a relay.
- 170 10. A circuit arrangement according to claim 8 or 9, characterized in that the connecting terminal (VK) is covered by a cap (AK) and the latter is connected to a switch (Q_3) such that the switching state of said switch (Q_3) changes upon removal of the cap from the connecting terminal (VK).
- 175 11. A circuit arrangement according to any of claims 8 to 10, characterized in that the operating voltage network (BN) is the supply network of a first motor vehicle (A) and that the external voltage network (FN) is the supply network of a second motor vehicle (B), or a charging device.
- 180 12. A circuit arrangement according to claim 8, characterized in that a measurement resistor (R_m) is connected between the terminal means of the connecting terminal (VK).